(12) UK Patent Application (19) GB (11) 2 279 631 (13) A

(43) Date of A Publication 11.01.1995

(21) Application No 9312809.8

(22) Date of Filing 22.06.1993

(71) Applicant(s)
Peter Cecil Cummins
Lake Cottage, Summer Lane, Combe Down, BATH, BA2 7EU, United Kingdom

(72) Inventor(s)
Peter Cecil Cummins

(74) Agent and/or Address for Service
Peter Cecil Cummins
Lake Cottage, Summer Lane, Combe Down, BATH, BA2 7EU, United Kingdom

(51) INT CL^6
B60R 1/02

(52) UK CL (Edition N)
B7J J69

(56) Documents Cited
GB 2222991 A **GB 2148814 A** **GB 1566452 A**
GB 1553376 A **WO 91/19626 A1** **WO 88/04619 A1**

(58) Field of Search
UK CL (Edition L) **B7J**
INT CL^5 **B60R 1/02**

(54) Swing-out mirrors

(57) A device which causes rear-view mirrors to swing outwards in order to recover the lost view due to the angle between the vehicle and the kerb, (the pre-determined angle or PDA) and to return them when no longer required.

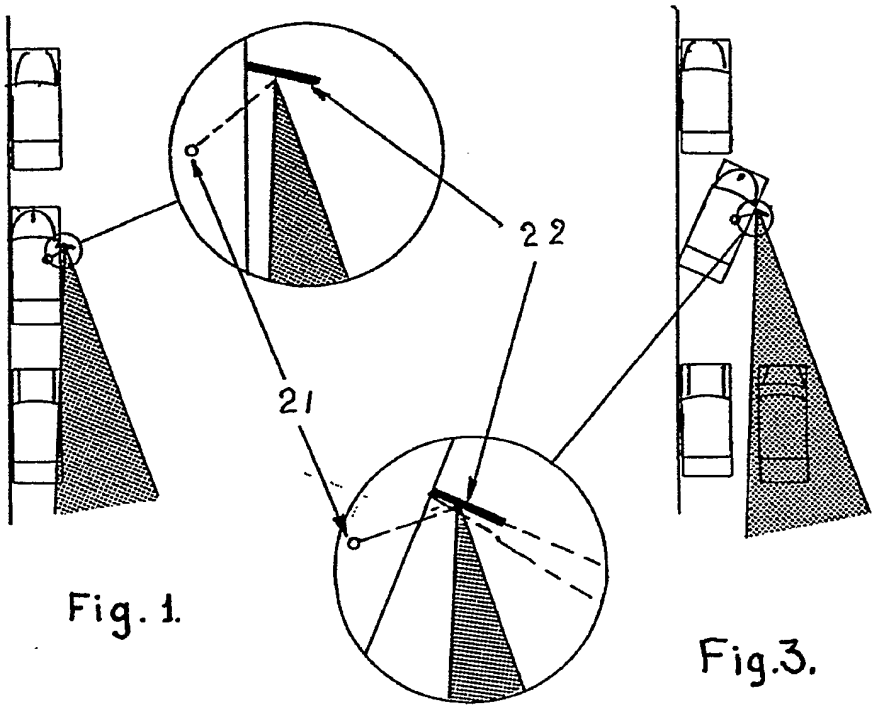

Fig. 1.

Fig.3.

GB 2 279 631 A

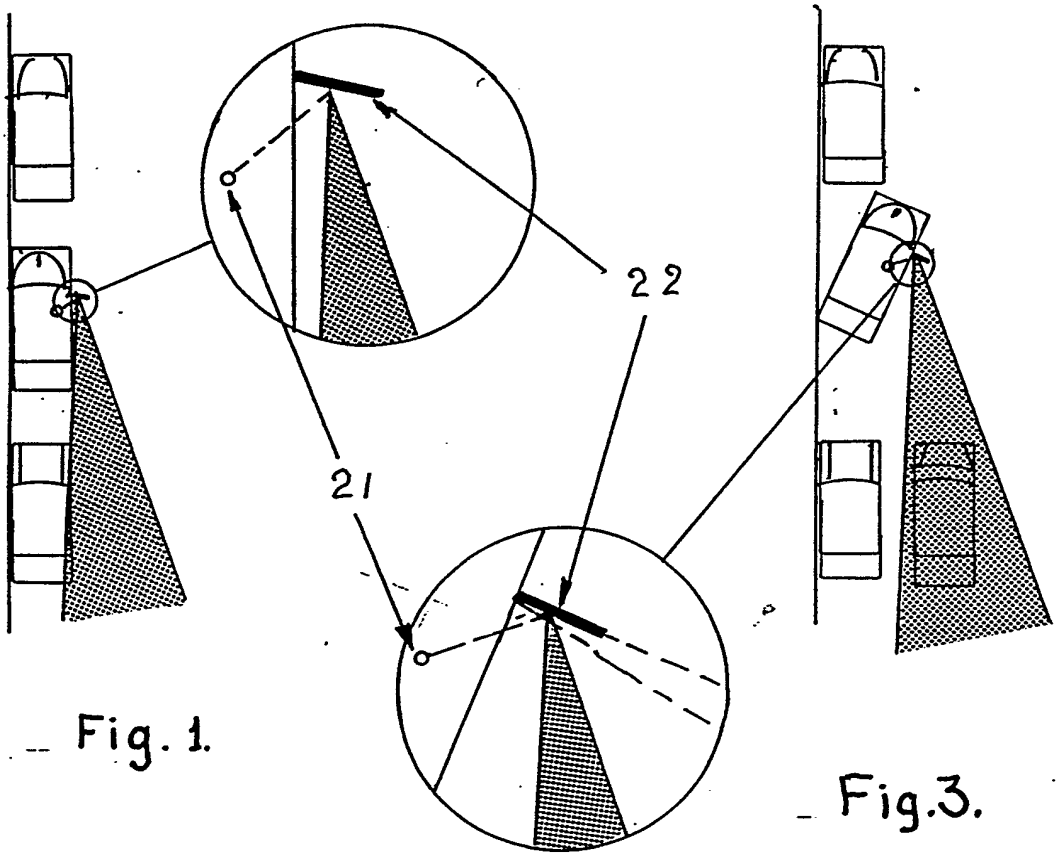

Fig. 1.

Fig.3.

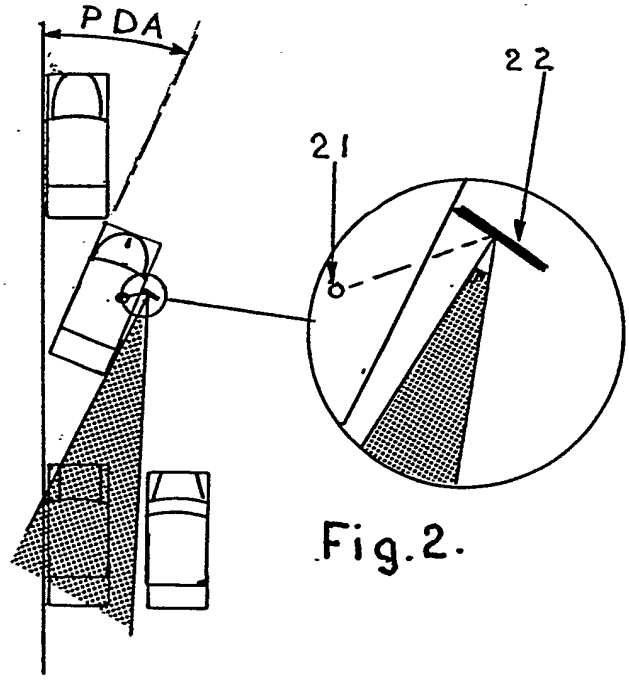

Fig.2.

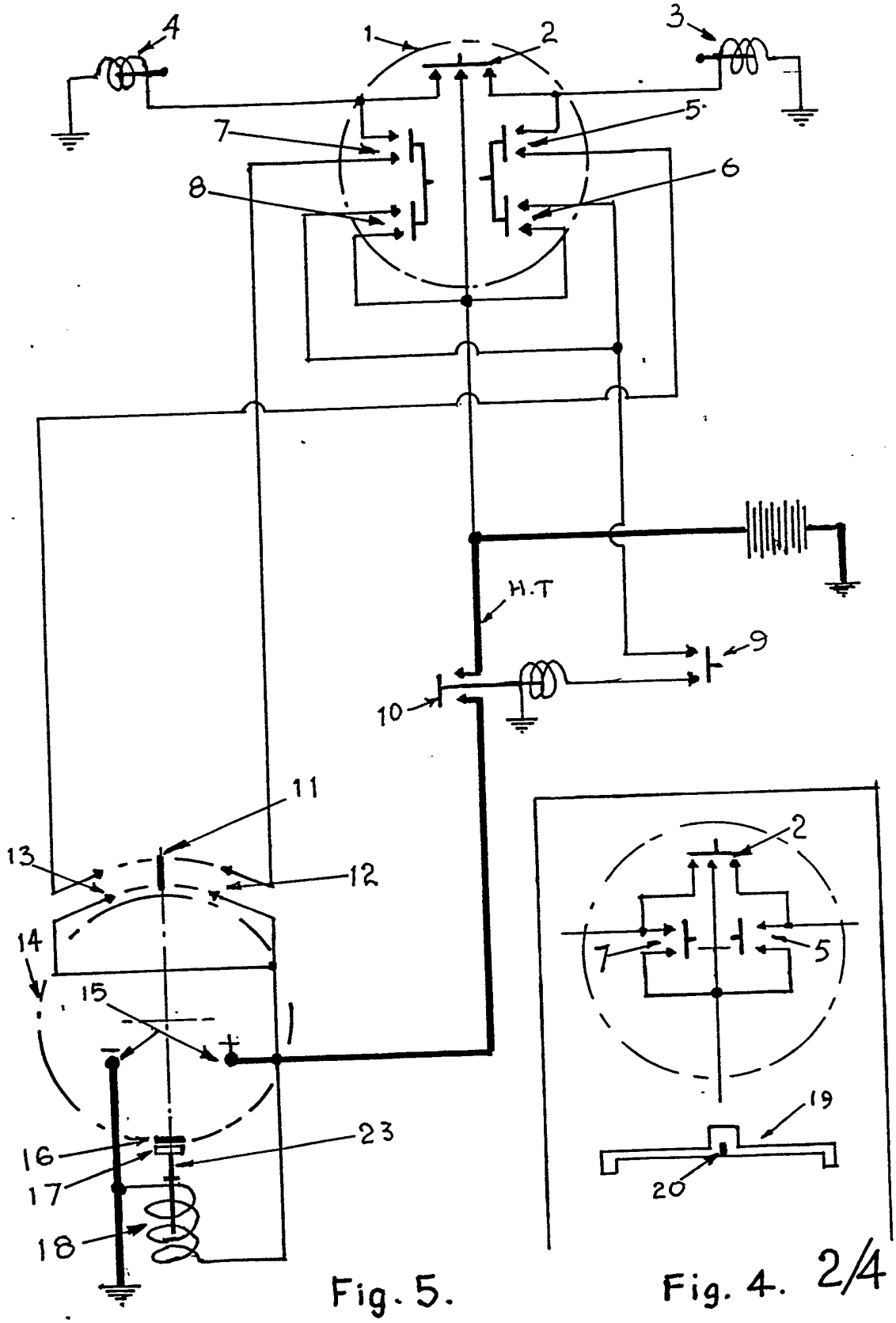

Fig. 5.

Fig. 4.

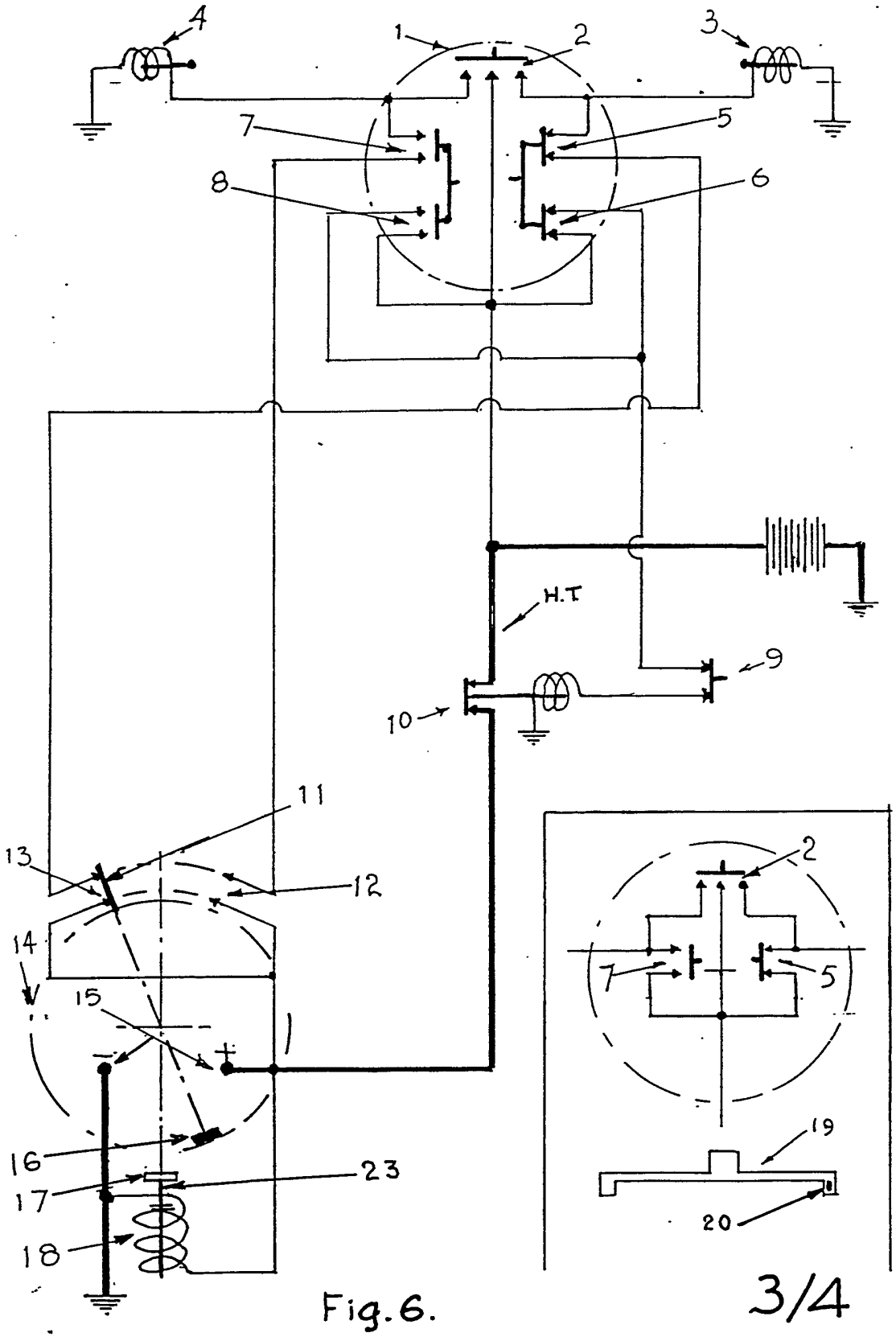

Fig.6.

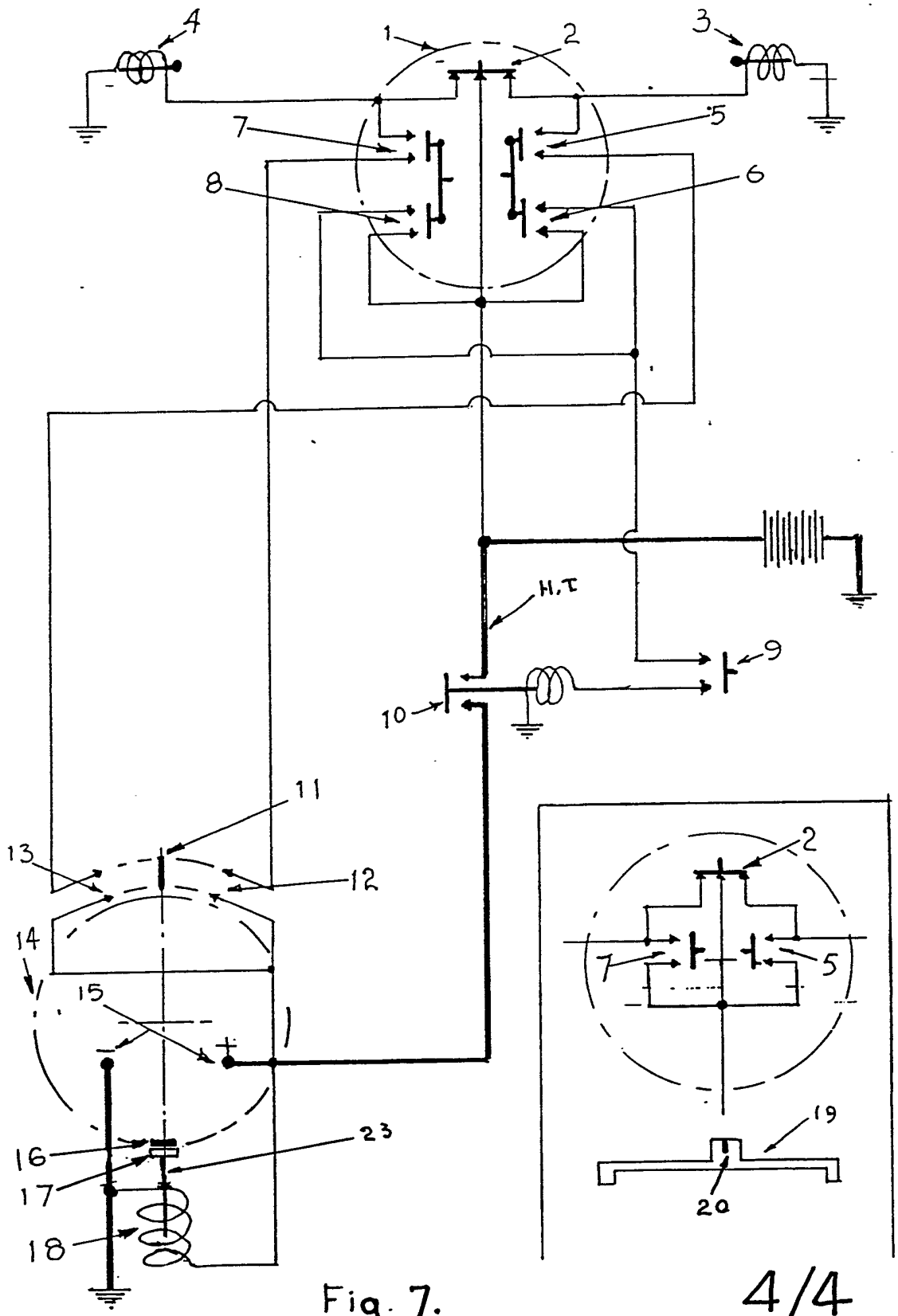

Fig. 7.

2279631

SWING-OUT MIRRORS

This invention relates to moving exteriorly mounted rear view mirrors for vehicles.

Rear view mirrors on vehicles are required by law. Those mounted on the vehicle's doors are well kown, in particular a type which is enclosed in a shell or case and is adjustable from within the vehicle, manually or otherwise. There are limitations to their usefulness when moving away from a kerb-side and the essential view is lost. The view may be recovered by auxiliary mirrors attached to the existing ones. These have the disadvantages of being small, of having a different degree of diminution from and reducing the effective width of the existing ones.

The present invention provides a device which causes rear view mirrors to swing outwards, thus recovering the lost view due to the angle between the vehicle and the kerb, (the pre-determined angle, or PDA) and to return when no longer required. or to swing out simultaneously. An explicit description of the invention will now follow with reference to the following drawings in which:-

Fig. 1. shows the scope of a rear view mirror
Fig. 2. shows the loss of useful view.
Fig. 3. shows the recovery of useful view with the mirror swung out.
Fig. 4. shows a wiring diagram for a manual switch. Switched off.
Fig. 5. shows a wiring diagram for a full installation. Switched off.
Fig. 6. shows Figs. 4 & 5 set for a right turn signal.
Fig. 7. shows Figs. 4 & 5 set for a wider view

Figs. 1-3 illustrate the movement of the right hand mirror. The driver's eye is (21) and the swing-out mirror is (22). For a left hand mirror the geometry is the same but the angles are different.

The cases or shells in which the mirrors are housed are themselves adjustable from within the vehicle to suit different drivers. Movements of the mirrors take place within their shells, the PDA being discrete to the vehicle type.

Referring to Fig.4: This shows the manual self-centring switch, which in this example is mounted vertically. Substituting this for the area (1) in Fig. 5., moving the lever (20) to the right closes the contacts (5) and energises the mirror solenoid (3). Moving the lever to the left closes contacts (7) and energises the mirror solenoid (4). The groove (19) shown has three notches. The lever (20) is spring loaded towards the driver so that at either end of its throw it enters a notch where it is retained until given a slight forward push to disengage and centre it. Pushing it into the central notch closes contacts (2) and energises solenoids (3) & (4) simultaneously as long as held in that position.

Referring to Fig. 6: Area (1) shows extra contacts contained within the direction indicator switch. Moving the indicator lever to the right closes contacts (5) & (6) and, the gearbox being in 1st speed, switch (9), similar to the reverse light switch, is closed, the solenoid switch (10) in the H.T. circuit closes and energises the gyro

(or digital substitute) in the memory unit (14) via the terminals (15), withdraws the keeper (17) from the magnet (16) setting free the memory unit and allowing its axis to remain parallel to the kerb as the vehicle moves out until the PDA has been reached. This closes the contacts (13) thus completing the circuit to solenoid (3) and swinging out the right hand mirror. Note that (23) is a non-ferrous link to avoid conflicting magnetic fields. Moving the indicator to the left closes contacts (7) in place of (5), (8) in place of (6), and completes the circuit to solenoid (4) as soon as contacts (12) are closed. When the self-cancelling feature of the direction indicator mechanism operates, solenoid switch (10), is de-energised, allowing the keeper (17) to come within the field of the magnet (16) and return the axis of the memory unit (14) to the axis of the vehicle.

Referring to Fig. 7: Moving the direction indicator switch upwards or closes the contacts (2) and swings out both mirrors simultaneously as long as held in that position.

Contacts (6) & (8) may be incorporated into the manually operated switch (See Fig. 4.) instead of the direction indicator switch, but with the loss of the self-cancelling feature.

CLAIMS

SWING—OUT MIRRORS

1. Rear view mirrors for vehicles comprising seperate mirrors for left and right hand vision, capable of being swung outwards to recover loss of essential view due to the angle of the vehicle with the kerbside when leaving the parked position from either side (the pre-determined angle or PDA), and returned to the original position

2 Rear view mirrors as in Claim 1. capable of being swung out simultaneously.

3. Rear view mirrors as in Claims 1 & 2 whereof the movement is caused electrically by solenoids energised by a switch with four positions: off, right, left & both.

4. Rear view mirrors as in Claim 1. wherein movement of either is caused when the axis of the vehicle makes the PDA with the kerb (or other datum) as held in a memory unit incorporating a gyroscope (or any digital substitute) .

5. Rear view mirrors as in Claims 2 or 4 wherein the switch contacts are incorporated into a regular direction indicator switch.

6. Rear view mirrors as in Claim 4. wherein starting the gyroscope is prevented above a chosen speed.

7. Rear view mirrors as described in Claims 1 - 6 wherein each mirror moves within a shell or case which is adjustable to suit individual drivers.

F ents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report) -5-

Application number
GB 9312809.8

Relevant Technical fields

(i) UK Cl (Edition L) B7J

(ii) Int Cl (Edition 5) B60R 1/02

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASE: WPI

Search Examiner
COLIN THOMPSON

Date of Search
12 AUGUST 1993

Documents considered relevant following a search in respect of claims

Category (see over)	Identity of document and relevant passages		Relevant to claim(s)
X	GB 2222991 A	(DAIMLER-BENZ A G)	1
X	GB 2148814 A	(DATOM LIMITED)	1
X	GB 1566452 A	(WUNSCH)	1
X	GB 1553376 A	(TAYLOR)	1
X	WO 91/19626 A1	(WESTECH INNOVATIONS INC)	1, 2
X	WO 88/04619 A1	(PEDERSEN)	1, 4

Category	Identity of document and relevant passages	Relevant to cla s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

DERWENT-ACC-NO: 1995-032110

DERWENT-WEEK: 199505

TITLE: Exterior mounted vehicle rear view mirrors, capable of swinging outward uses manual self-centring switch to energise gyroscope, with first gearbox speed, and uses solenoid to move either side mirror

INVENTOR: CUMMINS P C

PATENT-ASSIGNEE: CUMMINS P C[CUMMI]

PRIORITY-DATA: 1993GB-012809 (June 22, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE
GB 2279631 A	January 11, 1995	EN

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
GB 2279631A	N/A	1993GB-012809	June 22, 1993

INT-CL-CURRENT:

TYPE	IPC DATE
CIPS	B60R1/02 20060101

ABSTRACTED-PUB-NO: GB 2279631 A

BASIC-ABSTRACT:

The rear view mirrors, with separate mirrors for left and right hand vision, recover loss of essential view due to the angle of the vehicle with the kerbside when leaving the parked position from either side and return to the original position. Pref. the mirrors swing out simultaneously. The movement is pref. caused electrically by solenoids energised by a switch with four positions: off, right, left and both.

Movement of either mirror may be caused when the axis of the vehicle makes a preset angle with the kerb, as held in a memory unit incorporating a gyroscope. The switch contacts may be incorporated into a regular direction indicator switch. Starting the gyroscope is prevented above a chosen speed.

ADVANTAGE - Replaces auxiliary mirrors.

CHOSEN-DRAWING: Dwg.6/7

TITLE-TERMS: EXTERIOR MOUNT VEHICLE REAR VIEW MIRROR CAPABLE SWING OUTWARD MANUAL SELF CENTRE SWITCH ENERGISE GYRO FIRST GEAR SPEED SOLENOID MOVE SIDE

DERWENT-CLASS: Q17 X22

EPI-CODES: X22-J04;

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: 1995-025570